

Innovation systems for deforestation-free cocoa value chains: A case study from the Ucayali region of Peru

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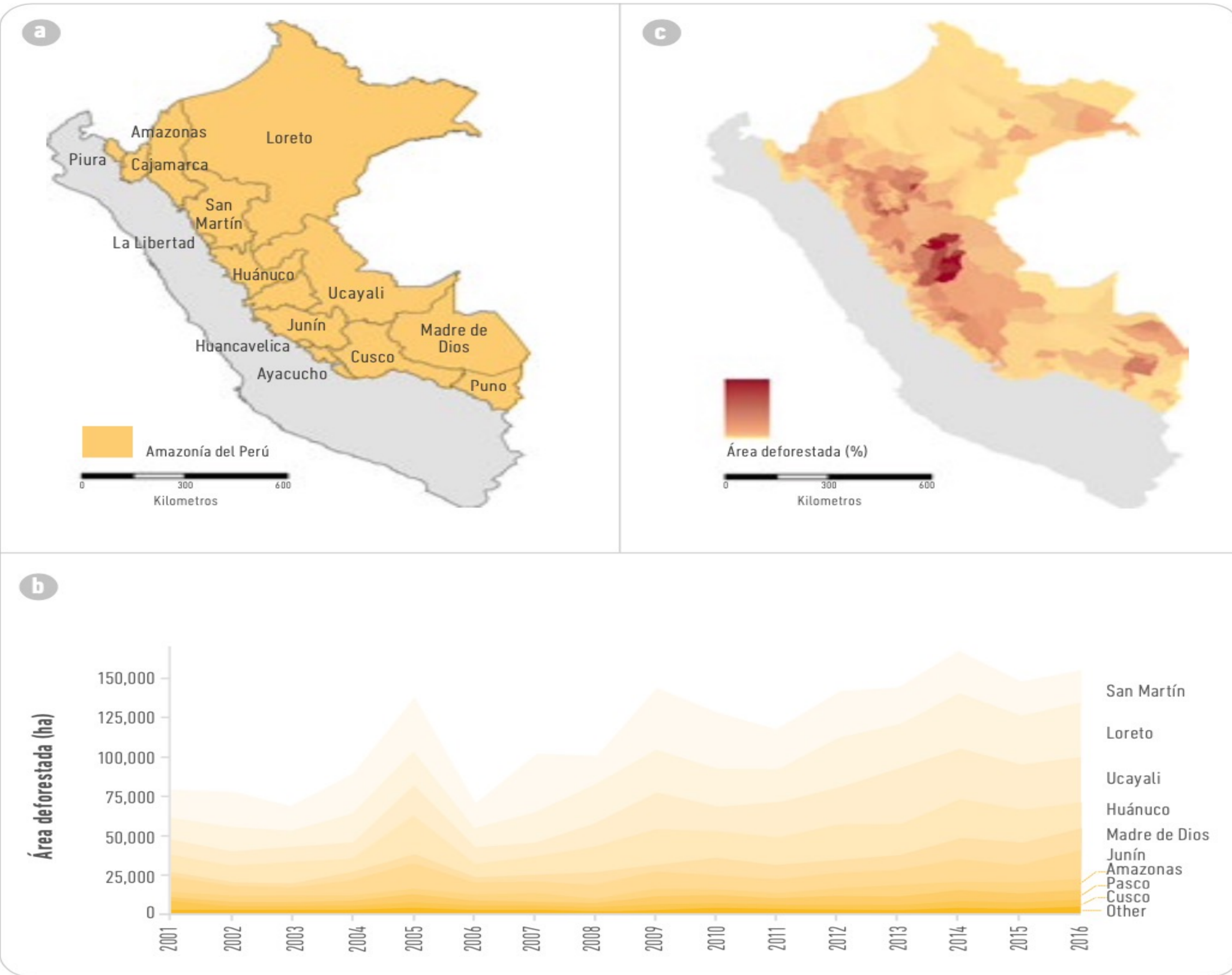
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Introduction

- Peru is one of the world's leading producers of cocoa beans, benefiting thousands of smallholder families. However, agricultural expansion contributes to the loss of primary forests and the generation of greenhouse gases.
- In Ucayali, a Peruvian province with a high deforestation rate, the Alliance Bioversity-CIAT is implementing projects aiming at establishing zero deforestation value chains, business models and incentivize mechanisms to increase adoption of agroecological farming practices. This program focuses on cacao value chains and aims at leveraging public and private sector incentives and investments for climate change, resilience and environmental sustainability.

Figure 1: a) Peruvian Amazon, b) Deforested area from 2001 to 2006 within the Peruvian Amazon by region, c) Deforestation at the district level from 2013 to 2016



Source: Castro-Núñez, Bax, Ganzenmuller & Francesconi, 2020

Results

- We find an agreement among the farmer members of the associations that they are not opposed to the development of the SAB project and are in favor of adopting some of the CIAT-promoted techniques. They concur that cocoa production has enhanced the standard of living of Ucayali's farming families.
- Farmers are concerned about deforestation and climate change. The producers were worried about the loss of biodiversity, the destruction of trees and medicinal plants, the rise in temperature, and the occurrence of more extreme rainfall.

...The forest is a system, and we are part of it...

- On the other hand, producers differ in that the Peruvian government protects forests and controls deforestation, and they receive technical assistance to improve their production, marketing, and access to better markets.

-4	-3	-2	-1	0	1	2	3	4
9. We receive technical assistance from the state to improve our	10. Regional and local governments offer cocoa promotion	19. We have neither the technology nor the money to invest to	21. Cocoa production reduces forests	7. The use of cover crops such as 'kudzu' helps prevent soil erosion	4. Cocoa bean quality is important for accessing better markets	5. Belonging to a producer organization brings better benefits for my	14. Cocoa cultivation has improved the quality of life of farming	1. Fertilization and pruning of my cocoa plants are necessary
	24. The planting of forest trees generates more work and not	12. Peruvian government protects its forests and controls	23. The state promotes the planting of cocoa in forests as an	2. It is important to increase yields per hectare of cocoa to avoid	25. Deforestation has reduced the number of wild animals and	6. Planting forest trees in my cocoa plot helps mitigate climate change	26. Climate change is a product of deforestation, bringing more	
		16. If the state supports us with incentives, cocoa	22. Slash and burn is a common practice in cocoa production	13. Cocoa is not planted in forests. It is planted on agricultural	20. Without title to my land, I cannot access credit to improve the	3. I collect infected cocoa fruits and bury them to prevent the spread of		
			17. To generate higher cocoa yields, I must plant more hectares with	18. Planting more hectares of cocoa ensures higher income for my	15. The forest provides food and wood for me and my family. We must take			
				8. NGOs provide us with technical assistance to prevent				
				11. The cocoa technical table helps us to solve problems in cocoa				

The objective of this research is to examine the perspective of Ucayali farmers about the implementation of the zero-deforestation business model.

Methodology

- The Q methodology and Participatory Rural Appraisal (PRA) tools were used to analyze the perspective of farmers on the implementation of the zero-deforestation business model.
- The free KADE 1.2.1 program was used to analyze the results because it is user-friendly and presents the data in a format tailored to the Q Methodology.

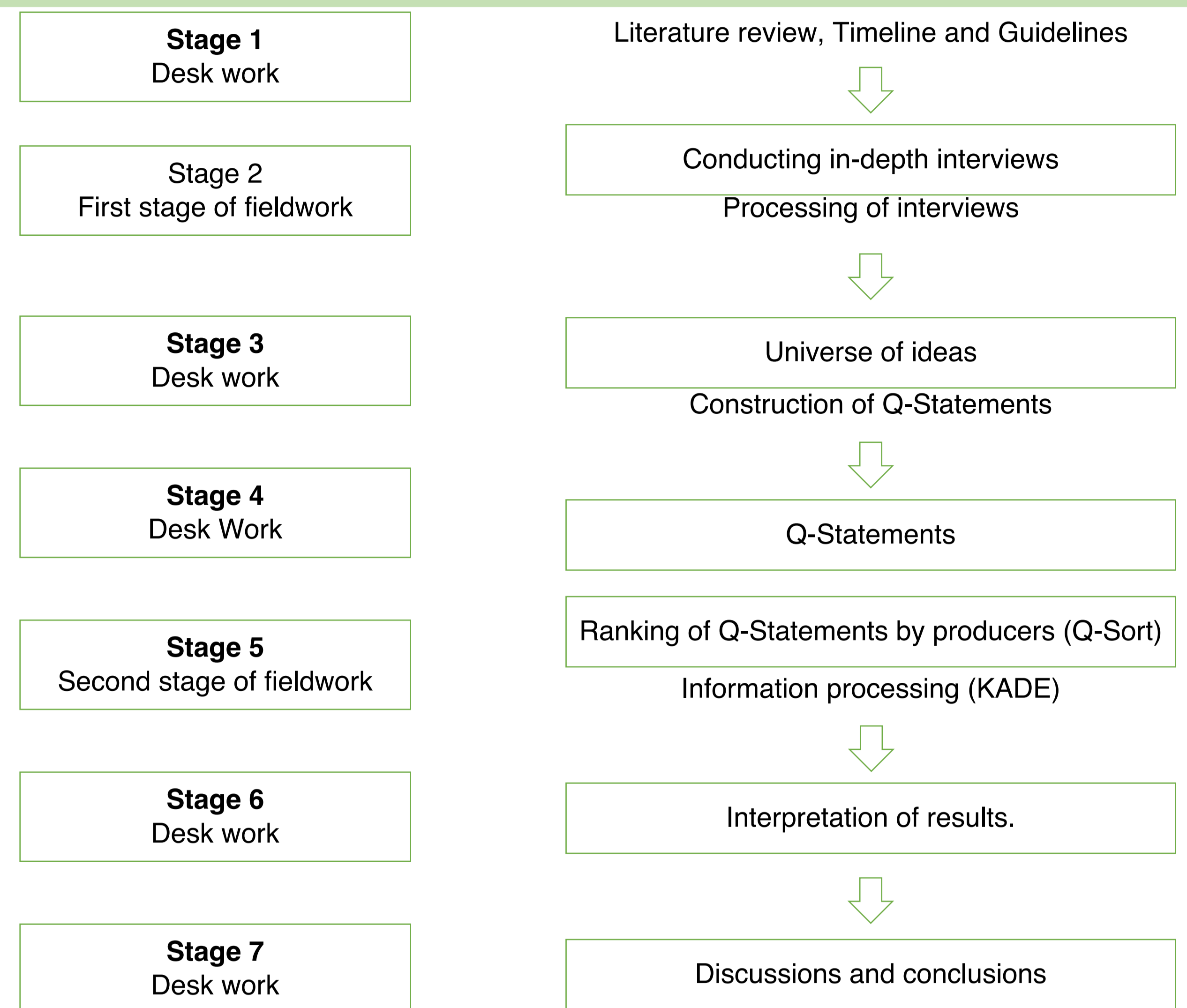
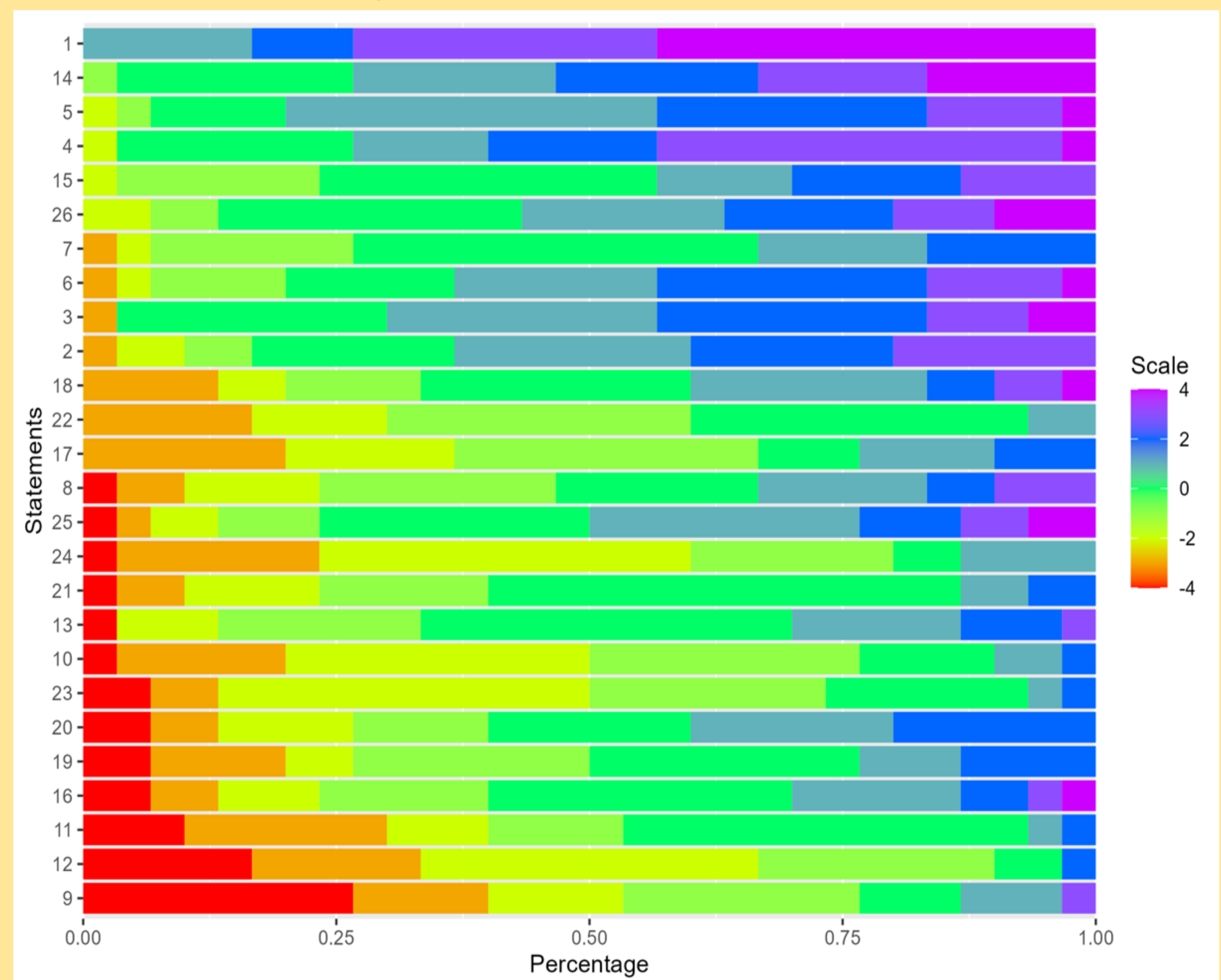


Figure 2. The seven steps for the Q Methodology and the time sequence between data collection and analysis stages. Source: adapted from Rodríguez & Tejera, 2008.

Results – Heat map



Conclusions

- From a methodological standpoint, the study allowed for the verification of the benefits of an evaluation methodology based on the perceptions of the various producers involved in cocoa value chains.
- The results of the study indicate that farmers are receptive to the implementation of the zero deforestation cocoa practices and the adoption of sustainable agricultural practices.
- The limited public sector support suggests an important gap that requires attention. This provides an opportunities to leverage private sector investments and business models to incentivize adoption of sustainable agroecological practices in Ucayali.

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